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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/808,356

03/25/2004

Takashi Kasahara

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MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC  
8321 OLD COURTHOUSE ROAD  
SUITE 200  
VIENNA, VA 22182-3817

EXAMINER

MCCLOUD, RENATA D

ART UNIT

PAPER NUMBER

2837

DATE MAILED: 08/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/808,356

Applicant(s)

KASAHARA ET AL.

Examiner

Renata McCloud

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5/3/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Objections*

1. Claims 5-6 are objected to because of the following informalities:

Claim 5: the semi-colon in lines 5 and 6 should be replaced with a comma.

Claim 6: : the semi-colon in lines 5, 7, and 9 should be replaced with a comma

Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erdman et al (US20030098660) in view of Hancock et al (US 5015903)

Claim 1: A fan motor comprising: a single-phase ecm (0123) including a stator (52) excited by applying an electric current to a coil to function as a single-phase magnetic pole (0083), and a rotor (54) which has a permanent magnet magnetized to a single phase and rotates as the magnetic pole of the stator (0070) changes; an impeller (20) which is rotated by a rotating shaft (18) of the rotor (54); and a drive circuit (Fig. 21) for controlling current to the coil, wherein the drive circuit applies pulse voltage to the coil and the coil constant is set so that a mean value of the current applied to the coil is low (0003, a low wattage). Erdman et al do not explicitly recite a single-phase stepping motor or a current of 10mA or smaller. Hancock et al teach that it is well known in the art that an ecm is commonly used in stepper motor applications (col 1:15-36). It would have been obvious to one having ordinary skill in the art at the time the

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invention was made to modify the apparatus taught by Erdman et al to use a stepping motor as taught by Hancock et al, and to have a current of 10 mA or smaller in order to drive the fan and since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art (see MPEP 2144.05 (2)).

**Claim 2:** Erdman et al teach the drive circuit includes CMOS transistors (0102-0103).

**Claim 3:** Erdman et al teach a timepiece (0093, 0104;0107).

4. Claim 4 rejected under 35 U.S.C. 103(a) as being unpatentable over Erdman et al in view of Hancock et al as applied to claim 1 above, and further in view of Imagi et al (US5650697).

**Claim 4:** Erdman et al and Hancock et al teach the limitations of claim 1. Referring to claim 4, they do not teach a pulse frequency which is output from the drive circuit at a time of starting is set lower than the pulse frequency during a steady operation. Imagi et al teach a pulse frequency which is output from the drive circuit at a time of starting is set lower than the pulse frequency during a steady operation (fig. 41). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Erdman et al and Hancock et al to have a starting frequency lower than a steady state frequency as taught by Imagi et al in order to drive the fan.

5. Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Erdman et al in view of Hancock et al as applied to claim 1 above, and further in view of Chen (US6589018).

**Claim 5:** Erdman et al and Hancock et al teach the limitations of claim 1. Referring to claim 5, they do not teach a coupling mechanism which couples the impeller to the rotating shaft wherein the coupling mechanism couples the impeller slidably to the rotating shaft of the rotor

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causes the rotating shaft to race with respect to the impeller at the time of starting the motor and causes the impeller to rotate by following the rotation of the rotating shaft by friction during the steady operation. Chen teaches a coupling mechanism which couples the impeller (Fig. 6:9) to the rotating shaft (34), wherein the coupling mechanism couples the impeller slidably to the rotating shaft of the rotor causes the rotating shaft to race with respect to the impeller at the time of starting the motor and causes the impeller to rotate by following the rotation of the rotating shaft by friction during steady operation (col. 3:35-40). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Erdman et al and Hancock et al to couple the impeller as taught by Chen in order to reduce assembly steps.

6. Claim 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Erdman et al in view of Hancock et al as applied to claim 1 above, and further in view of Bingler (US20030209343)

**Claim 6:** Erdman et al and Hancock et al teach the limitations of claim 1. Referring to claim 6, they do not teach a comprising a coupling mechanism which couples the impeller to the rotating shaft, wherein the coupling mechanism couples the impeller slidably to the rotating shaft; includes a permanent magnet for attracting the impeller so as to contact the impeller against the rotating shaft of the rotor with a predetermined holding-down force; causes the rotating shaft to race with respect to the impeller at the time of starting the motor and causes the impeller to rotate by following the rotation of the rotating shaft during the steady operation. Bingler teaches a coupling mechanism (fig. 5:9a) which couples the impeller (7) to the rotating shaft (8a), wherein the coupling mechanism (9a) couples the impeller slidably to the rotating shaft (8a); includes a permanent magnet (9a) for attracting the impeller so as to contact the

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impeller against the rotating shaft with a predetermined holding-down force; causes the rotating shaft to race with respect to the impeller at the time of starting the motor and causes the impeller to rotate by following the rotation of the rotating shaft during the steady operation (0033). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Erdman et al and Hancock et al to couple the impeller as taught by Bingler in order to reduce the size of the fan.

7. Claim 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Erdman et al in view of Hancock et al as applied to claim 1 above, and further in view of Faris (US4206719)

**Claim 6:** Erdman et al and Hancock et al teach the limitations of claim 1. Referring to claim 6, they do not teach a comprising a coupling mechanism which couples the impeller to the rotating shaft, wherein the coupling mechanism couples the impeller slidably to the rotating shaft; includes a permanent magnet for attracting the impeller so as to contact the impeller against the rotating shaft of the rotor with a predetermined holding-down force; causes the rotating shaft to race with respect to the impeller at the time of starting the motor and causes the impeller to rotate by following the rotation of the rotating shaft during the steady operation. Faris teaches a coupling mechanism (fig. 6:136) which couples the impeller (134) to the rotating shaft (106), wherein the coupling mechanism (136) couples the impeller (134) slidably to the rotating shaft (106); includes a permanent magnet (136) for attracting the impeller so as to contact the impeller against the rotating shaft with a predetermined holding-down force; causes the rotating shaft to race with respect to the impeller at the time of starting the motor and causes the impeller to rotate by following the rotation of the rotating shaft during the steady operation (col. 5:55-6:37). It would have been obvious to one having ordinary skill in the art at the time the

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invention was made to modify the apparatus taught by Erdman et al and Hancock et al to couple the impeller as taught by Faris in order to prevent electrical shock in the presence of moisture.

***Conclusion***

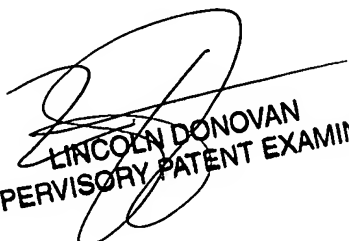
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renata McCloud whose telephone number is (571) 272-2069. The examiner can normally be reached on Mon.- Fri. from 5:30 am - 2pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-2800 ext. 37. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Renata McCloud  
Examiner  
Art Unit 2837

rdm

  
LINCOLN DONOVAN  
SUPERVISORY PATENT EXAMINER